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10/083,009	02/26/2002	Gilbert R. Reese	1500-US	4307

7590 09/07/2004

Legal Department
Teradyne, Inc.
321 Harrison Avenue
Boston, MA 02118

EXAMINER	
TRIMMINGS, JOHN P	

ART UNIT	PAPER NUMBER
2133	

DATE MAILED: 09/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/083,009	REESE, GILBERT R.	
	Examiner	Art Unit	
	John P Trimmings	2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 February 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,7,9-16,19,20,22 and 24-29* is/are rejected.

7)☒ Claim(s) *4-6,8,17-18,21,23* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 February 2002* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892) ✓
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-29 are presented for examination.

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description:

a. FIG.2 218, 226.

b. FIG.3,4,5 340, 342, 346, 348.

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to because FIG.2-9 contain references to clocks c0, a0-a3, t0, aN, but the said references in the Disclosure are all capitalized. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are

required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities:

a. Page 7 line 8 recites "224" but the examiner believes it should read, "226".

b. Page 13 line 8 recites "326, 328, and 330" but the examiner believes it should read "726, 728, and 730".

c. Page 16 line 10, "referring" should begin with a new paragraph. Also, in the same line, "three steps" should instead read, "four steps".

Appropriate correction is required.

Claim Objections

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 13 recites the limitation "the timing characteristics" in line 1. There is insufficient antecedent basis for this limitation in the claim.

5. Claim 14 recites the limitation "the inputs for specifying timing characteristics" in line 1. There is insufficient antecedent basis for this limitation in the claim.

6. Claim 15 recites the limitation "the inputs for specifying timing characteristics" in line 1. There is insufficient antecedent basis for this limitation in the claim.

7. Claim 16 recites the limitation "the inputs for specifying timing characteristics" in line 1. There is insufficient antecedent basis for this limitation in the claim.

8. Claim 19 recites the limitation "the inputted timing characteristics" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 1-3, 10-16, 19-20, 22, and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Organ et al., U.S. Patent No. 6449741, and in view of Southard, U.S. Patent No. 4598257.

As per Claims 1, 10 and 27:

Organ et al. teaches a system and method for configuring an automatic test system to produce a plurality of clocks (column 5 lines 10-25) from a reference clock via dividers coupled to the reference clock (FIG.25 852), comprising: an interface having a plurality of inputs for specifying desired frequencies of the plurality of clocks (column 8 lines 66-67 and column 9 lines 1-12), but fails to teach software, operative in response to the interface, for calculating values of dividers, for establishing the desired frequencies of the plurality of clocks. But in an analogous art, Southard utilizes firmware to maintain control of clocks by performing calculations based on divider values in order to maintain a frequency (column 6 lines 63-68 and column 7 lines 1-2 and column 15 lines 65-68 and column 16 lines 1-55). Column 2 lines 66-68 and column 3 lines 1-2 state an advantage to be a clock a circuit which is highly stable without variation in phase. One with ordinary skill in the art at the time of the invention, motivated as suggested, would find it obvious to apply the clock stabilization software of Southard to the clock system of Organ et al. in order to maintain precise control.

As per Claims 2 and 11:

Organ et al. further teaches a system/method as recited in claim 1/10, wherein the interface comprises at least one input for specifying the frequency of at least one of the plurality of clocks as a function of at least one other of the plurality of clocks (column 9 lines 5-8 and column 31 lines 16-19). And in view of the motivation previously stated, the claims are rejected.

As per Claims 3 and 12:

Organ et al. further teaches a system/method as recited in claim 1/10, wherein the interface comprises inputs for specifying timing characteristics of instruments of the test system (column 31 lines 39-48). And in view of the motivation previously stated, the claims are rejected.

As per Claims 7 and 20:

Organ et al. further teaches a system/method as recited in claim 1/10, wherein the software produces output indicative of the calculated values of said dividers (FIG.9 268), and the interface further comprises a display of the calculated values of said dividers (FIG.10 308). And in view of the motivation previously stated, the claims are rejected.

As per Claim 9:

Organ et al. further teaches a system as recited in claim 1, wherein the interface further comprises inputs for assigning different ones of the plurality of clocks to groups within which coherency must be maintained (column 5 lines 10-25 and column 31 lines 38-48). And in view of the motivation previously stated, the claim is rejected.

As per Claim 13:

Organ et al. further teaches a method as recited in claim 10, wherein a characteristic includes any of an instrument's sampling rate, frequency of interest, frequency divider values, frequency multiplier values, and frequency resolution (see FIG.9 268). And in view of the motivation previously stated, the claim is rejected.

As per Claims 14-16:

Organ et al. further teaches a method as recited in claim 13, wherein a characteristic includes at least one input for specifying an instrument's sampling rate, frequency, and resolution as a function of a timing characteristic of another instrument (column 31 lines 48-64). And in view of the motivation previously stated, the claims are rejected.

As per Claim 19:

Organ et al. further teaches a method as recited in claim 13, further comprising calculating a desired clock frequency for driving an instrument based upon a characteristic for that instrument (column 8 lines 66-67 and column 9 lines 1-19). And in view of the motivation previously stated, the claim is rejected.

As per Claim 22:

Organ et al. further teaches a method as recited in claim 10, wherein desired clock frequencies are related by ratios that ensure coherent testing (column 5 lines 10-25), and further comprising modifying the desired clock frequencies to precisely maintain the ratios, in instances wherein the test system cannot meet the inputted ratios at the desired frequencies (Southard, column 15

lines 65-68 and column 16 lines 1-56). And in view of the motivation previously stated, the claim is rejected.

As per Claim 28:

Organ et al. further teaches an automatic test system as recited in claim 27, further comprising configuration generating code, operative in response to the user interface, for generating test program code for configuring the plurality of dividers within the automatic test system to assume the calculated values (ex: column 28 lines 15-56). And in view of the motivation previously stated, the claim is rejected.

As per Claim 29:

A method of testing a device under test (DUT) in an automatic test system having a reference clock and a plurality of dividers for deriving a plurality of clocks (column 5 lines 10-25) from the reference clock (FIG.25 852), comprising: receiving a plurality of inputs for specifying desired frequencies of the plurality of clocks (column 8 lines 66-67 and column 9 lines 1-12); applying a signal to the DUT under control of a first of the plurality of clocks (FIG.22 720); sampling a signal from the DUT under control of a second of the plurality of clocks (FIG.22 716); and comparing sampled values with expected values to determine whether the DUT passes or fails (column 17 lines 22-29), and configuring the plurality of dividers to supply the desired clock frequencies (ex: column 28 lines 15-56). But the reference fails to teach calculating values of dividers, for establishing the desired frequencies. But in an analogous art, Southard utilizes firmware to maintain control of clocks by performing calculations based on divider values in

order to maintain a frequency (column 6 lines 63-68 and column 7 lines 1-2 and column 15 lines 65-68 and column 16 lines 1-55). Column 2 lines 66-68 and column 3 lines 1-2 state an advantage to be a clock a circuit which is highly stable without variation in phase. One with ordinary skill in the art at the time of the invention, motivated as suggested, would find it obvious to apply the clock stabilization software of Southard to the clock system of Organ et al. in order to maintain precise control.

10. Claims 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Organ et al., U.S. Patent No. 6449741, and in view of Southard, U.S. Patent No. 4598257 as applied to Claim 10, and further in view of Botham, U.S. Patent No. 5905967.

As per Claim 24:

Neither Organ et al. or Southard teach a method as recited in claim 10, wherein the receiving step includes receiving an input for each of the desired frequencies in the form of a rational numerator divided by a rational denominator. But Botham, in the Abstract teaches this feature. And in column 2 lines 63-67 and column 3 lines 1-2, Botham cites the advantage of coherency without drift. One with ordinary skill in the art at the time of the invention, motivated as suggested, would find it obvious to use the technique of Botham in the circuit of Organ et al. and Southard in order to control drift when requiring coherence.

As per Claim 25:

Neither Organ et al. or Southard specifically teach a method as recited in claim 10, further comprising generating test program code for programming the

plurality of dividers within the automatic test system to assume the calculated values. But Botham, in the Abstract does teach this feature. And in view of the motivation previously stated, the claim is rejected.

As per Claim 26:

Organ et al. further teaches a method as recited in claim 25, further comprising storing the test program code in a test program for running on the automatic test system (column 11 lines 32-67). And in view of the motivation previously stated, the claim is rejected.

Allowable Subject Matter

11. Claims 4-6, 8, 17-18, 21 and 23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John P Trimmings whose telephone number is 703-305-0714. The examiner can normally be reached on Monday through Thursday, 7:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert DeCady can be reached on 703-305-9595. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

John P Trimmings
Examiner
Art Unit 2133

jpt

GUY J. LAMARRE
PRIMARY EXAMINER